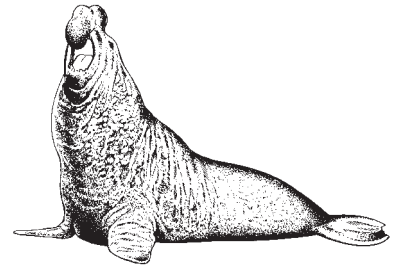




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*through Science*



## Discovering Northern Elephant Seals

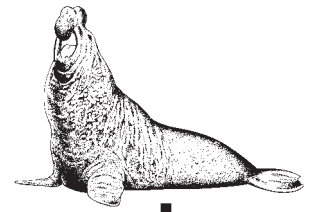
### On-Site Activities

How Can Teachers, Chaperones, and Students  
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How Can We Inspire Others to Protect Elephant  
Seals and Their Habitat? ..... 103

How Can I Capture My Experience in a Story,  
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# How Can Teachers, Chaperones, and Students Make the Most of Their Field Trip?



## On-site Lesson Plan

The following lesson plan is a suggestion of how to utilize the resources, locations, and the field guide contained in this curriculum to the benefit of students while visiting Point Reyes National Seashore.

**Time required:** 3 hours

**Location:** Point Reyes National Seashore

**Suggested group size:** consult with Education Coordinator

**Subject(s):** reading, language arts, science

**Concept(s) covered:** stewardship education

**Written by:** Christie Denzel Anastasia, National Park Service

**Last updated:** 12/07/00

### Student Outcomes

At the end of this activity, the students will be able to:

- Correctly identify different sexes and age classes of elephant seals.
- Accurately map colony populations from an aerial view.
- Observe and categorize social behaviors.
- Survey a habitat and determine its suitability for elephant seals.

### California Science Standard Links (grades 6 – 8)

This activity is linked to the California Science Standards in the following areas:

6th grade: 5a- food webs

5b- organisms and the physical environment

5e- the number and types of organisms an ecosystem can support depends on the resources available and abiotic factors

7b- select and use appropriate tools and technology to perform tests, collect and display data

7f- interpret a simple scale map

7h- interpret changes in natural phenomena over time

7th grade: 3e- extinction and environment

7a- select and use appropriate tools and technology

7c- communicate logical connections

8th grade: 9b- evaluate the accuracy and reproducibility of data

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## National Science Standard Links (grades 5 – 8)

This activity is linked to the National Science Standards in the following areas:

- Content Standard A – Identify questions that can be answered through scientific investigation; Use appropriate tools and techniques to gather, analyze, and interpret data; Think critically and logically to make the relationships between evidence and explanations; Communicate scientific procedures and explanations.
- Content Standard C – Structure and function in living systems; Reproduction and heredity; Regulation and behavior; Populations and ecosystems; Diversity and adaptations of organisms.
- Content Standard F – Populations, resources, and environments

## Procedures

### **1. Reservations**

Please use the reservation form provided in this unit to contact the Seashore of your plans to do a self-guided, curriculum-based field trip to Point Reyes National Seashore. If you do not make reservations, you may find multiple school groups at the Elephant Seal Overlook and too many other students to effectively focus on the reason for your visit. Let the Education Coordinator know if you would also like to reserve the Elephant Seal Kit (see Teacher Preparation for kit contents.)

### **2. Prepare chaperones**

Advise chaperones that they will need to take an active role in this field trip. Each chaperone should have a copy of the field journal and be aware of what is expected of students on each page. Provide maps of the Chimney Rock area to each chaperone (see attachments in Teacher Preparation)

### **3. Travel to Bear Valley Visitor Center**

Bear Valley Visitor Center has modern bathroom facilities and running water if your students need a break from the bus. This is also the location to pick up your Elephant Seal Kit or clarify directions to the Elephant Seal Overlook.

### **4. Travel to Elephant Seal Overlook**

There are pit toilets at the overlook and a current tide chart on the bulletin board.

### **5. Form Groups**

Student and chaperones should be formed into two groups. After a set amount of time the two groups will swap locations. The first group will travel to the Lifeboat Station and the second group to the Elephant Seal Overlook. Chaperones in each group should know at which time they should start heading toward the other location. Budget in about a fifteen-minute walk between the two locations.



## 6. Things to keep in mind while walking with groups

- There can be limited traffic on the paved road to the Historic Lifeboat Station. Be prepared to instruct your group to one side of road should a car approach.
- The trail to the Elephant Seal Overlook is narrow and requires students to walk single-file. Also, there may be muddy and/or slippery conditions.
- Returning from the Historic Lifeboat Station requires walking up a steep paved hill. Designate a halfway stop to facilitate group staying together.
- Designate lunchtime. There are three picnic tables behind Historic Lifeboat Station and grassy areas near parking lot. There are no covered areas available in windy, rainy weather other than inside personal vehicles.
- Restrooms are only located in the Chimney Rock Parking Lot.
- There are no sources of potable water at this location.
- Carry a first aid kit.

## 7. Field Journal Sheets

Students will complete the same set of journal sheets at each location (Observation Sheet, Field Census, Behavior Survey, Behavior Field Notes, Habitat Survey). Chaperones can designate a set amount of time for each journal sheet to keep students progressing through the variety of observations. The Scar Card, Tagging and Marking of Pinnipeds, and Other Marine Species Sighting Log can be completed at either location, depending on time and observations.

## 8. How Can I Capture My Experience in a Poem or Drawing?

If these optional journal activities (third on-site lesson) are included in your students' journals, allow time for completion. You may choose to have students sit quietly apart from each other to encourage contemplation and creativity.



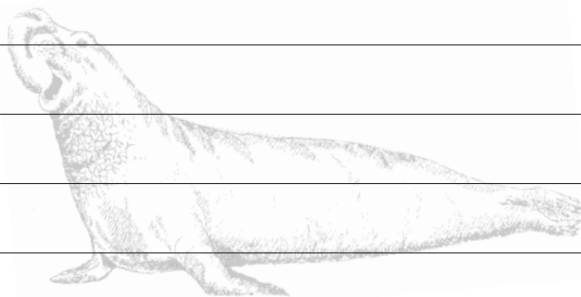
## Things to Remember While on Creek Field Trip



# Field Journal Sheet

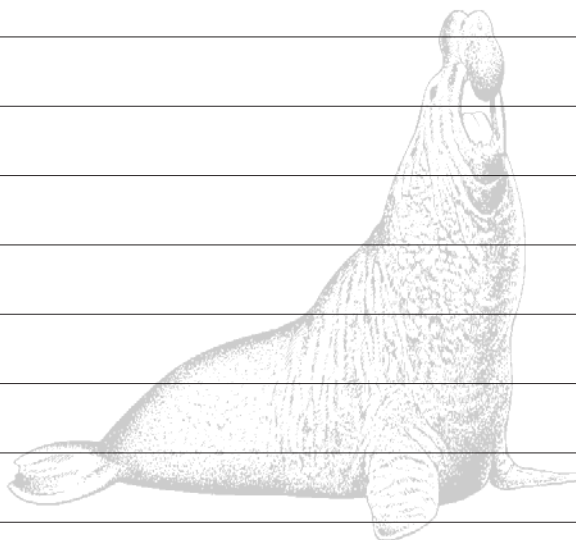
### THREE SAFETY PRECAUTIONS:

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_



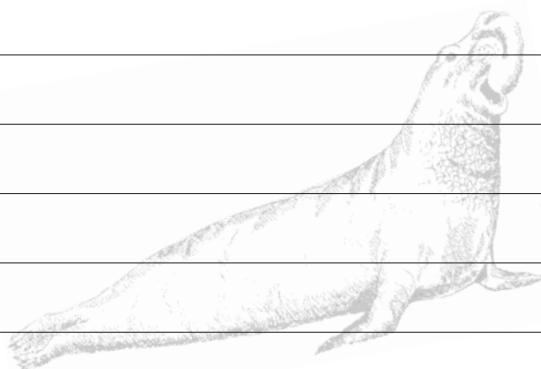
### FOUR RESOURCE PROTECTION BEHAVIORS:

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_



### THREE THINGS TO KEEP IN MIND WHEN VISITING ANY PART OF THE NATIONAL PARK SYSTEM:









1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_





# Field Journal Sheet

## Field Identification of Elephant Seals

<p><b>Bull</b></p> 	<ul style="list-style-type: none"> <li>– heavy pink scarring</li> <li>– chest shield rises above eyes</li> <li>– big heavy nose with notch across top</li> </ul>
<p><b>Sub-adult<sub>4</sub></b></p> 	<ul style="list-style-type: none"> <li>– less scar tissue on chest</li> <li>– chest shield does not rise above eyes</li> <li>– less of a notch</li> </ul>
<p><b>Sub-adult<sub>3</sub></b></p> 	<ul style="list-style-type: none"> <li>– light scarring</li> <li>– while lying on sand, nose will touch ground</li> <li>– wrinkles on chest</li> </ul>
<p><b>Sub-adult<sub>2</sub></b></p> 	<ul style="list-style-type: none"> <li>– while lying on sand, nose will not touch ground</li> <li>– no chest shield</li> <li>– definite male nose</li> </ul>
<p><b>Cow</b></p> 	<ul style="list-style-type: none"> <li>– often seen with pup</li> <li>– can see nipples when lying on back</li> <li>– no big nose</li> </ul>
<p><b>Yearling</b></p> 	<ul style="list-style-type: none"> <li>– harbor seal size</li> <li>– blonder, lighter fur</li> <li>– smaller than other adults</li> </ul>
<p><b>Weaner</b></p> 	<ul style="list-style-type: none"> <li>– not associated with a female</li> <li>– silver coat, patchy black fur on some</li> </ul>
<p><b>Pup</b></p> 	<ul style="list-style-type: none"> <li>– black fur</li> <li>– close to a female</li> <li>– wrinkly when first born</li> <li>– nursing</li> </ul>

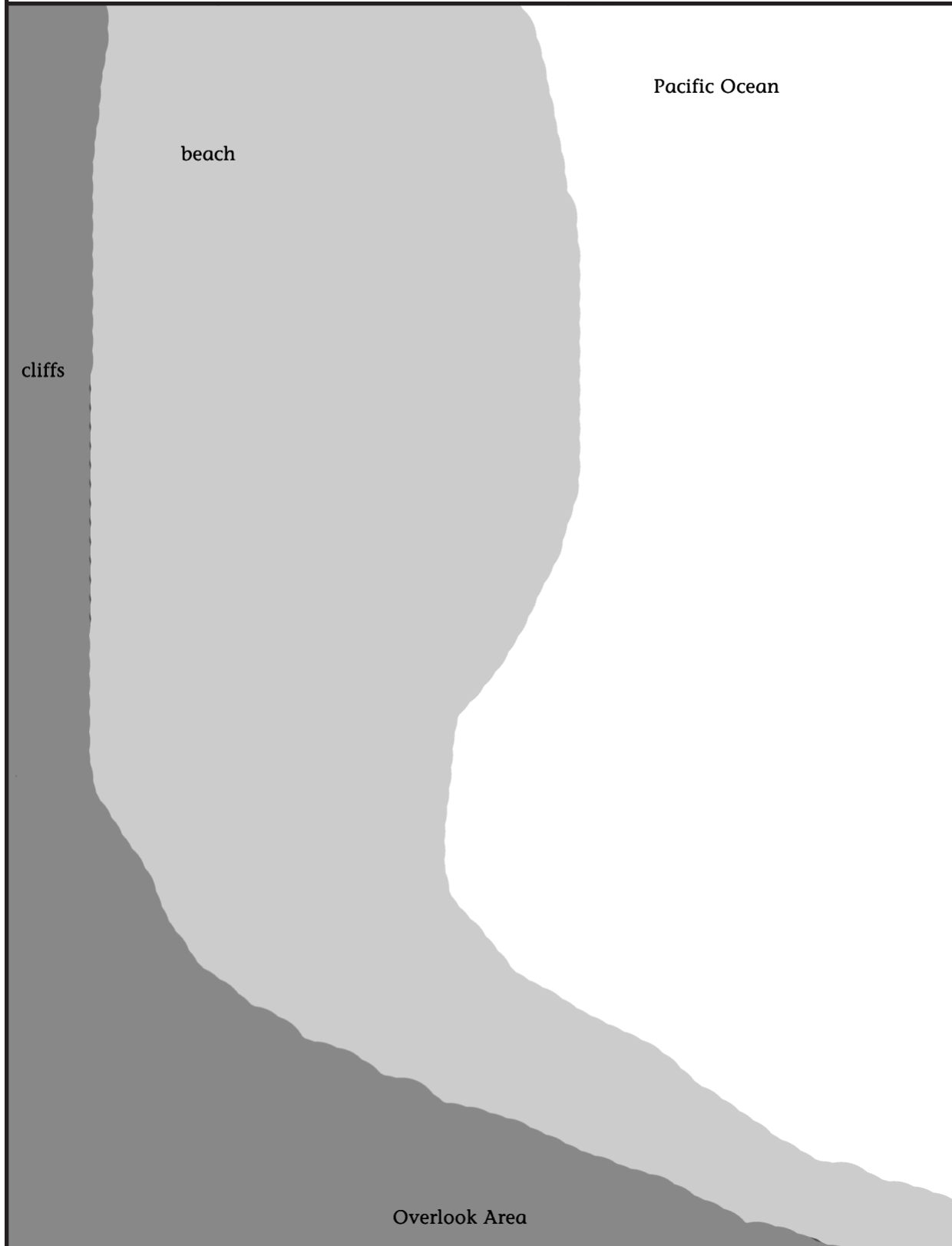


## Elephant Seal Overlook Observation Sheet



## Field Journal Sheet

Place an "X" on the map below for every elephant seal you see. Try your best to show their locations on the beach or in the water. Place an "O" if you see an alpha male, an "X" if you see a pup.



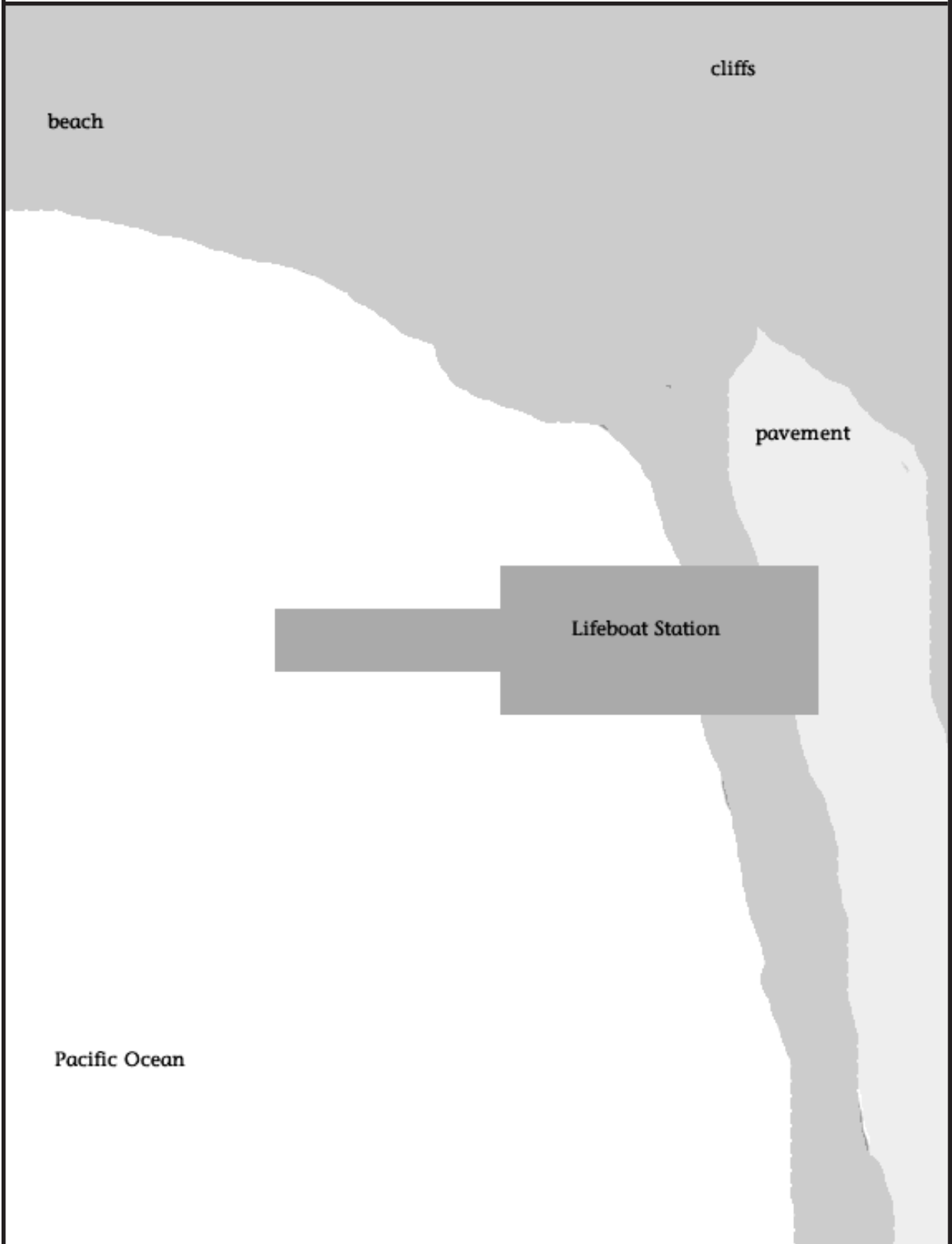




# Field Journal Sheet

## Lifeboat Station Observation Sheet

Place an "X" on the map below for every elephant seal you see. Try your best to show their locations on the beach or in the water. Place an "O" if you see an alpha male, an "X" if you see a pup.





# Field Journal Sheet

Field Census			
Location:		Elephant Seal Overlook	Lifeboat Station
<b>OVER ONE YEAR OLD</b>	male	alpha	
		bull	
		Sub-adult 4	
		Sub-adult 3	
		Sub-adult 2	
	female	cow with pup	
		cow without pup	
	<b>UNDER ONE YEAR OLD</b>	yearling	
weaner			
pup			
<b>VISITORS:</b>	Describe visitor activities below:		



# Field Journal Sheet

## Behavior Survey

Location: Elephant Seal Overlook Lifeboat Station

	male	female	pup	comments
approach				
avoid				
bite				
chase				
fight				
flip sand				
float in water				
follow				
give birth				
lie alert				
lift head				
mate				
move				
nurse				
open mouth				
scratch				
shove				
sleep or rest				
sniff				
swim in water				
vocalize				



# Field Journal Sheet

## Behavior Field Notes

Use the space below to record three separate behaviors you are observing in either elephant seal colony.

Location: Elephant Seal Overlook Lifeboat Station

Location: Elephant Seal Overlook Lifeboat Station

Location: Elephant Seal Overlook Lifeboat Station



## Habitat Survey

Take a moment to observe everything surrounding the area where elephant seals are or could be located. Use what you see and know to answer the following questions.

Location: Elephant Seal Overlook Lifeboat Station

time	tide	weather	wind	clouds
	high/low		light medium strong	none some all

What would attract elephant seals to this particular location?


Identify five human impacts on this area:

1.
2.
3.
4.
5.

List three changes to this habitat that would make it more desirable for elephant seals:

1.
2.
3.

Carrying capacity is the maximum number of individuals of a population that a habitat can support. What limits the carrying capacity for elephant seals in this location?

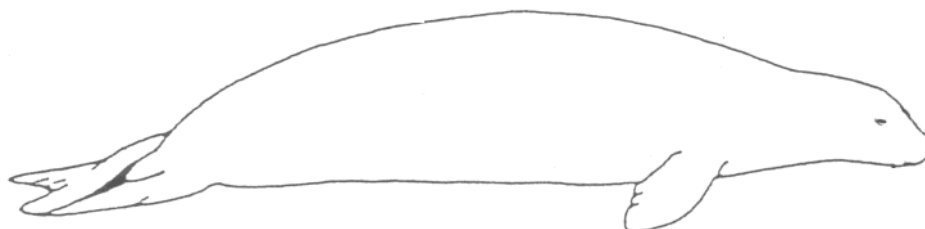

## Female Scar Card



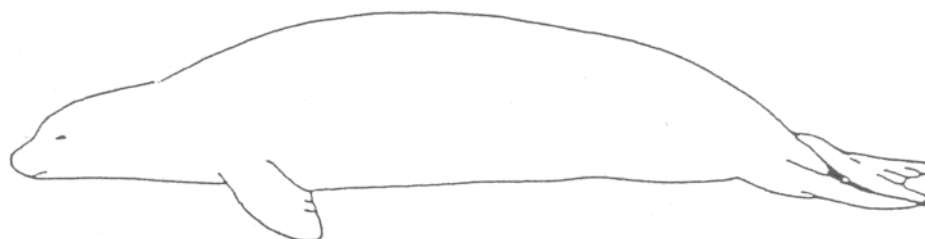
## Field Journal Sheet

Use this scar card to note any characteristics of individual elephant seals that could be used to identify this elephant seal in the future. Mark scars, shark bites, or unusual coloration.

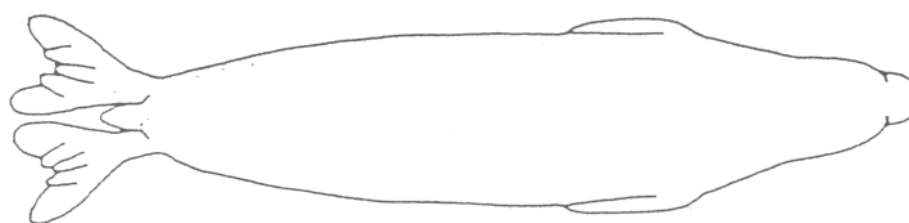
Right side view



Left side view



Top side view



Bottom view





## Male Scar Card

Use this scar card to note any characteristics of individual elephant seals that could be used to identify this elephant seal in the future. Mark scars, shark bites, or unusual coloration.

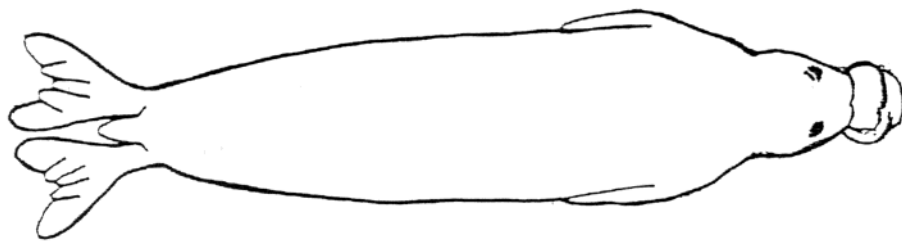
Right side view



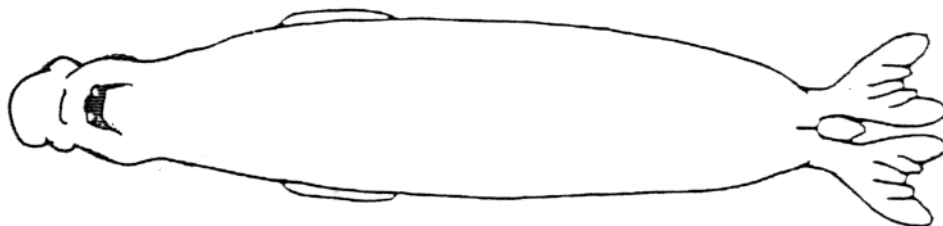
Left side view



Top side view



Bottom view





# Field Journal Sheet

Tagging and Marking of Pinnipeds				
	what it looks like:	where to look:	observations:	
flipper tag	colored plastic tag	seal lions: front flippers seals: webbing between digits on hind flippers		
brand	similar to a brand used on cows	on mammals back or side		
dye mark	hair dyed number	anywhere on fur		
radio/satellite tag	small transmitter with battery, sometimes antenna sticks up	attached to flipper or glued to head or back		
time depth recorder	set in a white plaster-like base	glued to seal's back		
IF YOU CAN CLEARLY SEE A NUMBER....				
Number	tag color	type of pinniped	where is tag located? <i>right, left front or hind flipper</i>	condition of individual <i>live, sick, dead, injured</i>





# Field Journal Sheet

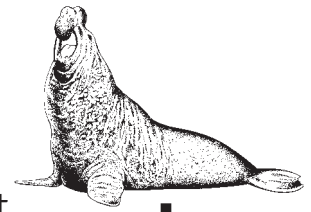


Tag Colors and Locations		
TAG COLOR	SPECIES	LOCATION
white	California Sea Lion	San Clemente Island, CA Playa Atyla Island, MX Angel de la Guarda, MX
	Northern Elephant Seal	San Clemente Island, CA Cedros Island, MX San Benito Island, MX Sand Island, OR San Simeon/Gorda, CA Piedras Blancas, CA
	Harbor Seal	Santa Rosa Island, CA
yellow	California Sea Lion	San Miguel Island, CA
	Harbor Seal	San Miguel Island, CA Puget Sound, WA Gray's Harbor, WA (females only)
	Northern Elephant Seal	San Miguel Island, CA
orange	all species	Rehabilitation Centers-California and Northwest Marine Mammal Stranding Networks
pink	Northern Elephant Seal	Farallon Islands, CA <b>Point Reyes, CA</b>
red	California Sea Lion	San Nicolas Island, CA
	Northern Elephant Seal	
dark green	Northern Elephant Seal	Año Nuevo, CA
	Steller Sea Lion	
	California Sea Lion	
lime green	California Sea Lion	Morro Bay, CA
	Harbor Seal	Morro Bay, CA <b>Point Reyes, CA</b>
light blue	Northern Elephant Seal	Mexico
	California Sea Lion	Monterey Bay, CA
	Harbor Seal	
blue-green	California Sea Lion	Santa Barbara Island, CA
	Northern Elephant Seal	
	Harbor Seal	Puget Sound, WA Gray's Harbor, WA (males only)
purple	Northern Elephant Seal	Cape San Martin, CA
metal	Northern Fur Seal	Alaska
NUMBER BRAND	California Sea Lion	San Miguel Island, CA Seattle, WA
	Northern Elephant Seal	Año Nuevo, CA
HAIR DYE	California Sea Lion	San Miguel Island, CA Seattle, WA
	Northern Elephant Seal	San Miguel Island, CA San Nicolas Island, CA Año Nuevo, CA Farallon Islands, CA <b>Point Reyes, CA</b>
	Northern Fur Seal	San Miguel Island, CA

[illegible]

[illegible]

# How Can We Inspire Others to Protect Elephant Seals and Their Habitat?



Students will videotape elephant seals on their field visit and use the video to foster stewardship with elementary classes or via local programming.

**Time required:** 15 minutes on field visit, various amounts of time depending on strategy

**Location:** Point Reyes National Seashore/classroom

**Suggested group size:** small groups

**Subject(s):** language arts

**Concept(s) covered:** stewardship education

**Written by:** Trudie Behr-Scott, Hill Middle School, Novato

**Last updated:** 12/12/00

## On-site Lesson Plan

### Student Outcomes:

At the end of this activity, the students will be able to:

- Formalize a presentation on elephant seals that will impart stewardship values to other audiences.

### National Science Standard Links (grades 5 – 8)

This activity is linked to the National Science Standards in the following area:

- Content Standard F – Populations, Resources, and Environments: Causes of environmental degradation and resource depletion vary from region to region and from country to country; Risks and Benefits: Important personal and social decisions are made based on perceptions of benefits and risks.

### Materials

To be provided by the teacher:

- Camcorder and video tape to be used on visit

### Procedures

#### 1. Identify audience

Research local public access channels. Most are required to show 20 minutes/ month local programming. Or, identify other elementary classes that would be interested in viewing a presentation on Elephant Seals created by your class.



## 2. Secure camcorder/tape for day of field visit

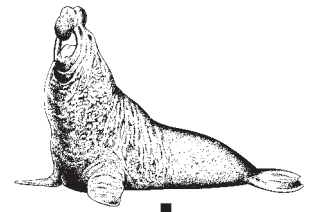
One adult chaperone could rotate the camcorder to each of the two groups for 5-10 minutes of videotaping. (If you have access to editing equipment, students may tape longer segments.)

## 3. Finalize video

Back at school, have students create a script (to go along with video images) discussing some of the following points.

- Why are elephant seals at Point Reyes National Seashore?
- What are some threats to elephant seals and their habitat?
- What can we do to protect elephant seals right to exist?
- What was the most enjoyable aspect of viewing elephant seals?
- What do we mean by stewardship?
- What have we done already to help elephant seals?
- What would we like to be able to do in the future?

# How Can I Capture My Experiences in a Story, Poem or Drawing?



## On-site Lesson Plan

After visiting an elephant seal colony, students will use their experiences to create a story, poem, or drawing. Several activity options are provided. Students or teachers choose which activity will be completed.

**Time required:** time varies

**Location:** on-site/classroom/homework

**Suggested group size:** entire class

**Subject(s):** creative writing; science, language arts

**Concept(s) covered:** poetry, creative writing

**Written by:** Melinda Repko, National Park Service

**Last updated:** 12/08/00

### Student Outcomes

At the end of this activity, students will be able to:

- Reflect on their experiences by sharing a poem, story, or drawing.
- Make emotional connections to the resources.

### Materials:

To be supplied by teacher:

- Extra paper included into field journal

To be photocopied from this guide:

- **How Can I Capture My Experiences in a Story, Poem, or Drawing?**  
field journal sheet

### Procedures

1. Include a copy of the **How Can I Capture My Experience in a Story, Poem, or Drawing?** field journal sheet in each students journal.
2. Either choose an activity for students to complete or have students decide which they would like to complete.
3. Allow a defined amount of time to complete this activity in the field. Students may refine their work once back in class.

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### Extension Ideas

1. Have students complete a variety of the activities, creating a booklet of their creative work.
2. Using canvas material and tempera paint, have students create a mural of their experiences at the Elephant Seal Overlook.



## How Can I Capture My Experiences in a Story, Poem or Drawing?

Choose one of the following activities. Use extra paper to complete your work.

### 1. Create a Haiku

Haiku: A three-line, nonrhyming poem originating in Japan, based on syllables.

Line 1: Five syllables  
Line 2: Seven syllables  
Line 3: Five syllables

### 2. Create a Diamante

Diamante: This-five line poem is displayed in the shape of a diamond.

Line 1: noun  
Line 2: adjective adjective  
Line 3: participle participle participle participle  
Line 4: noun noun noun noun  
Line 5: noun

### 3. Freestyle Poem

A poem can rhyme or not rhyme. It can be many words or few. The only limitation is your imagination!

### 4. Create an Outline-Creation

Draw the outline of an elephant seal in pencil. Use the outline as a guide to write your words on or use the outline as a guide to write your words in. Use words or sentences that describe its characteristics.

Hint: if you draw in pencil and write in pen, you can carefully erase the pencil when the ink dries.

### 5. Create a Comic Strip

Think about the different events that took place while you were visiting the elephant seal colony. Create a comic strip depicting one of these events. Don't forget to give your comic strip a title.

### 6. Create a Story

Write a short story from the view point of an elephant seal, describing your experiences at the overlook colony. What is it like to be at Point Reyes National Seashore? How was your journey this year out at sea? Have you been in any battles? What do you think of all the people who come to visit?

### 7. Create an Essay

What would be missing from your life if elephant seals had gone extinct and you never had the chance to see them?